



CROWING CUPS

Topic
Sound

Key Question
What makes the cup crow?

Learning Goal
Students will make the chicken crow by pulling on its string to set up a vibration.

Guiding Document
NCR Standard

- Sound is produced by vibrating objects. The pitch of the sound can be varied by changing the rate of vibration.

Science
Physical science
sound energy

Integrated Processes
Observing
Applying

Materials
For each student:
red paper
yellow paper
white paper or googly eyes (see *Management 5*)
plastic cup (see *Management 1*)
string (see *Management 2*)
paper clip
sponges, optional (see *Management 7*)

For the class:
scissors
tape or glue
pushpin

Background Information
All sounds are produced by vibrations. Your voice produces sounds because your vocal cords vibrate. Put your hand on some stereo speakers, turn up the volume, and feel the vibrations. A bell rings because its clapper hits its brass side causing it to vibrate. You hear the notes of a piano because the keys you strike vibrate strings.

In this activity, students will use their fingers to pull on a string causing it to vibrate. The cup serves to amplify the sound. By using short, quick pulls on the string, it sounds like a chicken.

Management

1. Cups of various sizes can be used. For small hands, 3-oz and 5-oz cups are easier to manipulate.
2. Cut the string into lengths about 15 to 18 inches long.
3. Prior to doing the activity, make a hole in the bottom of each cup with a pushpin. Turn the cup upside down, push the pin through the center of the bottom, and wiggle the pushpin around to enlarge the hole.
4. Thread the string from the bottom to the inside of the cup.
5. Eyes can be cut from white paper. Students can put black dots in them for the pupils. Googly eyes can be used instead of paper ones. Googly eyes can be purchased in sewing or craft departments.
6. The red and yellow paper is for students to cut out beaks and combs for their cups. No pattern is provided because the size of the cups used will determine the size that the beaks and combs need to be. Students can fold over a small portion of the shape they cut to tape or glue to the cup in the appropriate place.
7. It's easier for students to make the string vibrate if it's wet. You can tie a small cube of sponge to the bottom of the string. Dampen the sponge, pinch it around the string, and slide it down the string.

Procedure

1. Tell students they will make a chicken that crows.
2. Distribute the construction page and materials to each student.
3. Guide them through the construction process.
4. Demonstrate how to tug on the string to make the chicken crow.
5. Discuss the results.

Connecting Learning

1. What made your chicken crow?
2. Did all the cups sound the same? Explain.
3. What do you think would happen if we used a paper cup instead of a plastic cup? What would we have to do to find out?
4. What are you wondering now?



Key Question

What makes the
cup crow?

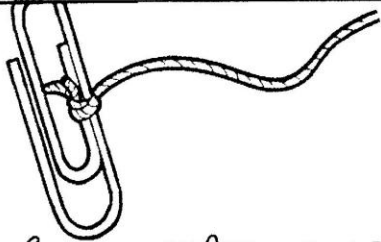
Learning Goal

Students will:

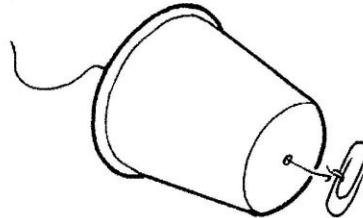
make the chicken crow by pulling on its
string to set up a vibration.

"SQUAWK!" CROWING CUPS ASSEMBLY "SQUAWK!"

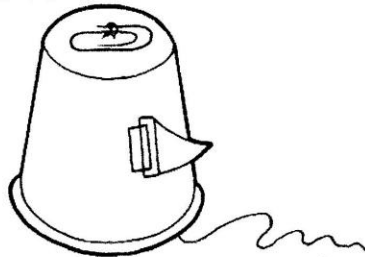
1. Tie a paper clip to one end of your string.



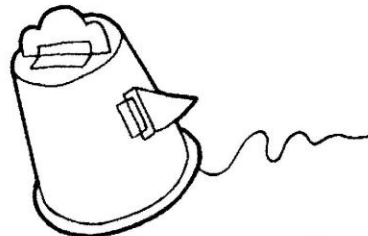
2. Push the string down through the hole in the bottom of the cup.



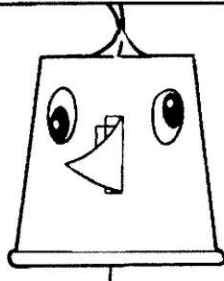
3. Cut a beak from yellow paper. Tape it on the cup.



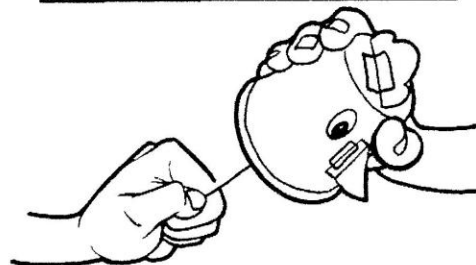
4. Cut a comb from red paper. Tape it on the cup.



5. Make eyes for your chicken. Glue them on the cup.



6. Slide your fingernails down the string to make the chicken crow.





Connecting Learning

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